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U.S. Wireless Firms Invest Significantly More than European Counterparts

U.S. wireless firms invest over 2.5 times more than European counterparts, creating significant advantages for consumers and innovation in the United States.

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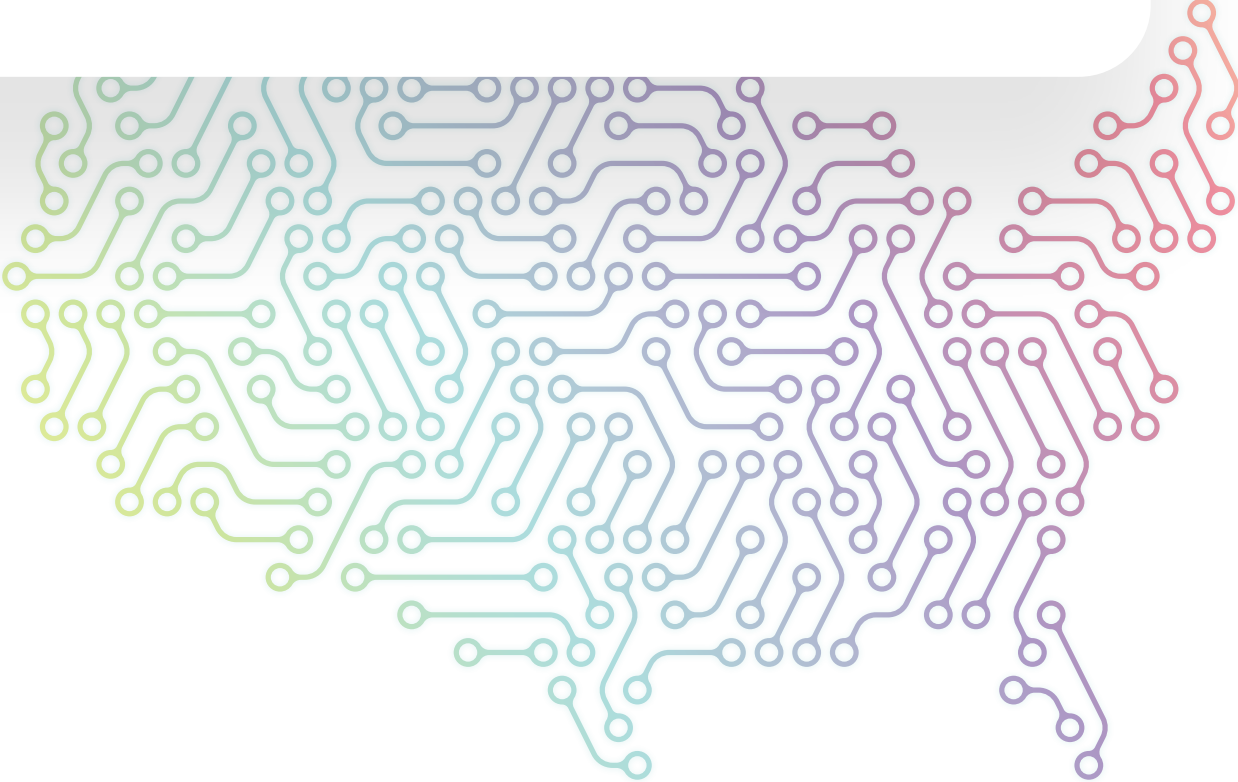
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Introduction

Numerous European executives and policy leaders have recently lamented the relatively poor state of Europe's digital infrastructure. A letter from nineteen CEOs complained that low levels of mobile network investment risked Europe lagging in a range of mobile-enabled technologies like artificial intelligence, smart grids, and industrial automation.¹ The CEOs pointed to the recent comprehensive analysis of European competitiveness spearheaded by Mario Draghi for the European Commission, which found telecom "investment per capita is half of that in the United States, and we are lagging in 5G and fiber deployment."²

Similarly, the CEO of Ericsson has recently pointed out that "U.S. mobile operators invest twice as much per capita in mobile infrastructure compared to their European counterparts," which he finds particularly alarming because "[e]arly investments in mobile enabled the United States to achieve a scale in the digital platforms that Europe currently struggles to match."³ At Mobile World Congress in 2025, Deutsche Telekom CEO Timotheus Höttges put his advice for Europe bluntly: "We should just copy what the Americans are doing."⁴

Indeed, the United States provides a contrast to Europe's investment challenges. The U.S. wireless industry invests a tremendous amount of money in order to offer world-leading 5G networks, far more than Europe on both an absolute and per-population basis. This is in part thanks to a more favorable policy environment in the United States that encourages vigorous competition between wireless firms.

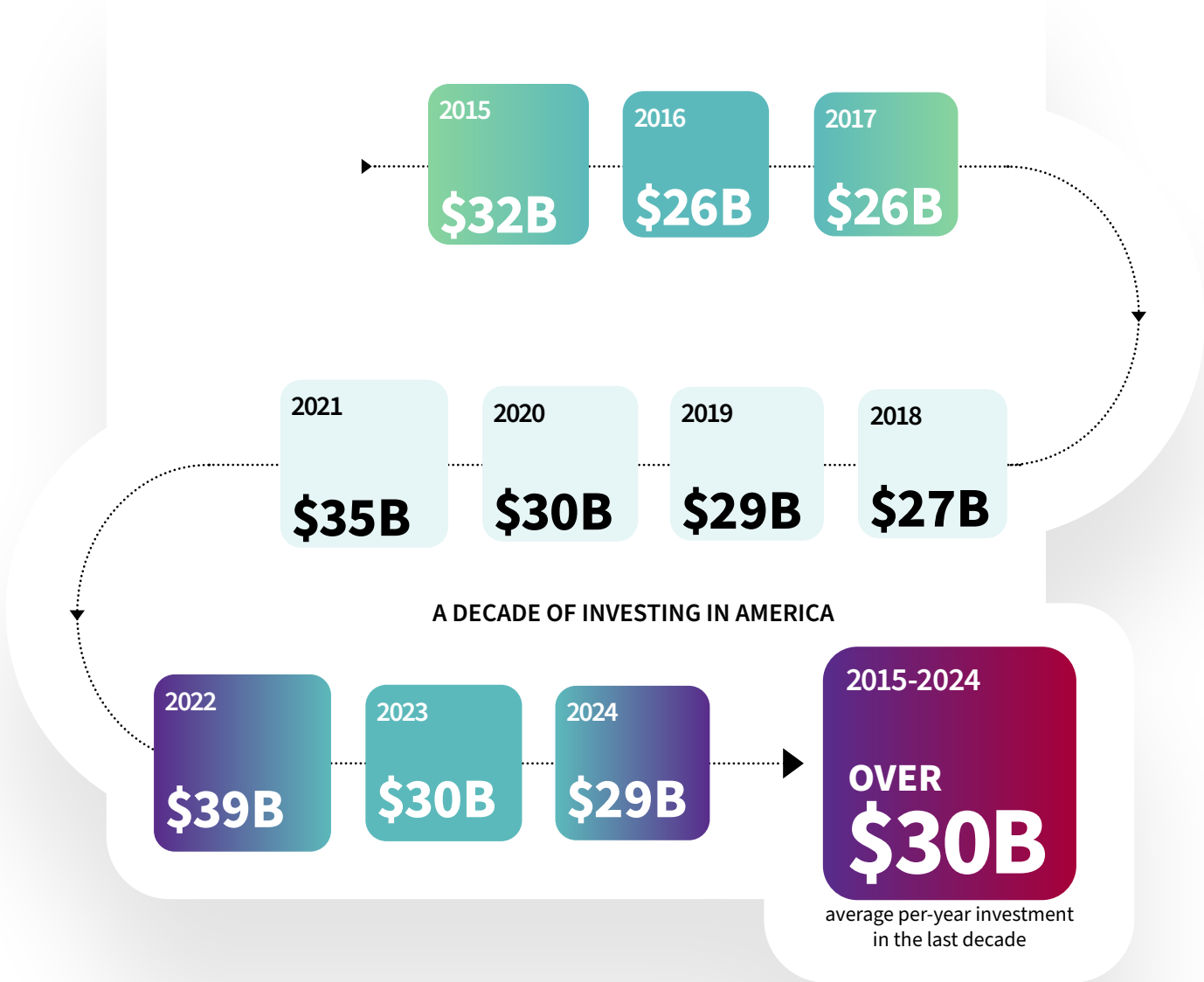
This difference ripples through our respective economies and has real world implications for both consumers and innovators. Mobile industry investment is a proven force multiplier for the economy. Better wireless networks continually deliver greater value for residential and business consumers, amplifying innovation and productivity across different sectors. Looking at the overall impact of this investment, the wireless industry supports as much as \$825 billion in GDP and 4.5 million jobs annually in the United States.⁵ 5G deployment is anticipated to ultimately contribute \$1.5 trillion in U.S. economic growth across various industries.⁶

All of this growth can be traced back to the investments made in wireless infrastructure. A review of recent investment data validates the concerns of European leaders and the importance of the U.S. promoting investment-friendly and innovation-encouraging policies. If anything, Europe's mobile investment problem is even worse than the "half of that in the U.S." commonly cited by European leaders. The data consistently show U.S. firms investing over 2.5 times more than their European counterparts. This has real-world consequences for policymakers and consumers.

And this is about to matter even more in the age of artificial intelligence. As the CEO of Vodafone warned, Europe risks an AI bottleneck if it does not strengthen its wireless networks. AI innovation will require capacity, density, and advanced networks. AI and 6G will thrive where a strong 5G foundation already exists. The countries that invest early and aggressively in wireless infrastructure will be the ones best positioned to lead in AI-driven services, autonomous systems, immersive applications, and next-generation manufacturing.

“We should just copy what the Americans are doing.”

- Timotheus Höttges, CEO, Deutsche Telekom



The United States Drives Global Wireless Investment

The United States benefits from a huge annual investment by the wireless industry in our nation’s infrastructure. As President Trump has recognized, 5G networks are “a vital link to America’s prosperity and national security in the 21st century,” making “American farms more productive, American manufacturing more competitive, and American healthcare better and more accessible.”⁷

Overall, the U.S. wireless industry has made a \$734 billion cumulative investment in wireless network infrastructure.⁸ Nearly a third of this wireless network capital expenditures—over \$219 billion—has been invested since 2018.⁹ Last year alone saw more than \$29 billion invested into U.S. wireless networks infrastructure.¹⁰ To put that in perspective, U.S. providers account for more than 20 percent of total worldwide wireless investment, while only serving about 4.3 percent of the global population.

These figures are only for investments in wireless infrastructure, and so significantly under-represent the total investment made by the wireless industry each year. Broadening the scope of to include investment that supports wireless and other business operations shows that from 2020 to 2022, the major publicly-traded wireless providers invested a combined average of \$54 billion per year.¹¹ If we expand the scope again to include purchases of spectrum licenses, total wireless industry capital spending was \$773 billion between 2011 to 2022.¹² That \$773 billion is more than any other U.S. industry invested over the same time horizon.¹³

Comparisons Show U.S. Wireless Operators Invest Over 2.5 Times More Than European Counterparts

A review of available investment data reveal that regardless of methodology and scope, U.S. wireless investment is greater than two, and up to three times more than their European counterparts.

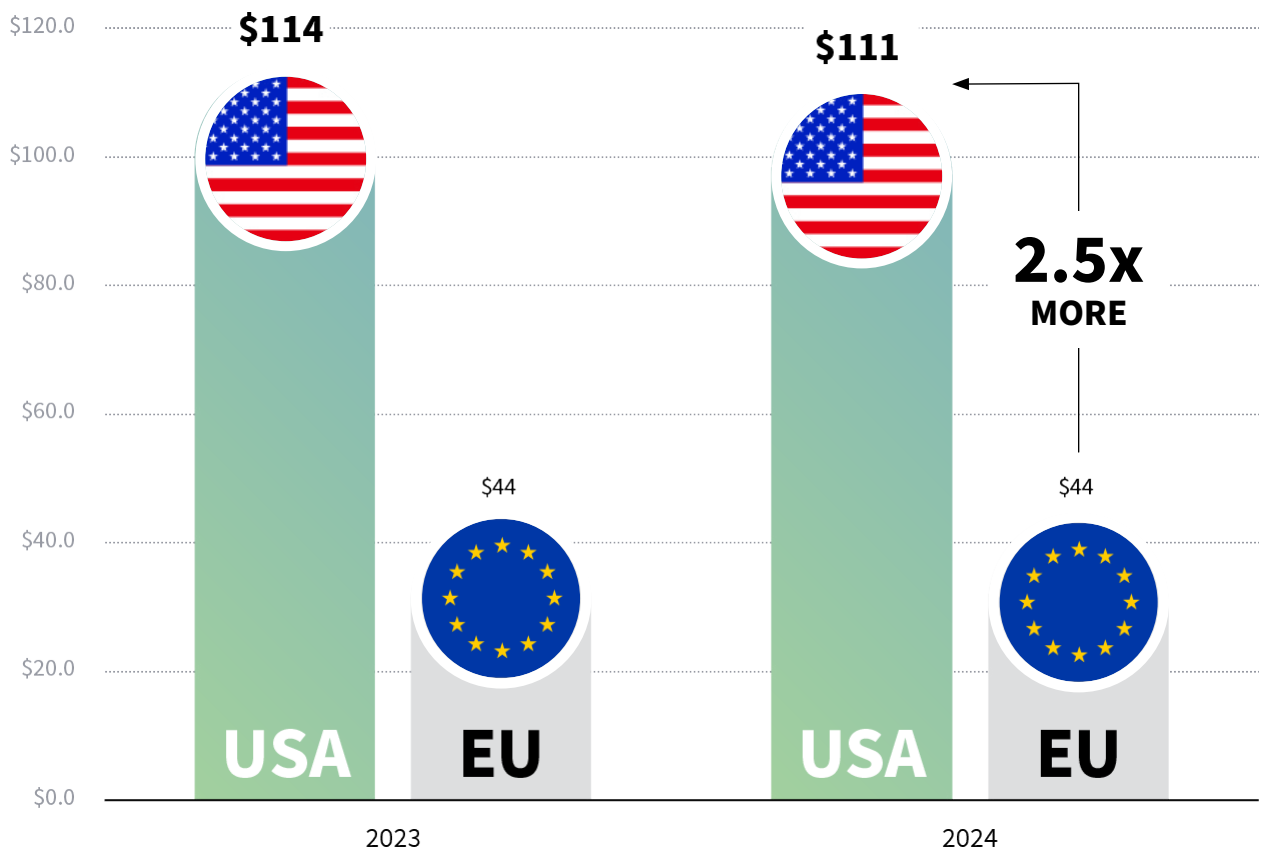
U.S. providers account for
OVER 20%
of worldwide wireless investment,
while only serving about 4.3% of
the global population

OMDIA INVESTMENT DATA

Omdia, an independent analyst and consulting firm, offers data insights into 24 major European countries.¹⁴ For each of these countries, as well as the United States, Omdia tracks mobile infrastructure investment and population. In 2023, Omdia data indicates U.S. mobile capex per capita totaled \$113.85, compared to \$43.73 in Europe. As of 2024, mobile capex per capita in the U.S. totaled \$110.99 compared to \$44.31 in Europe—about two and a half times more.

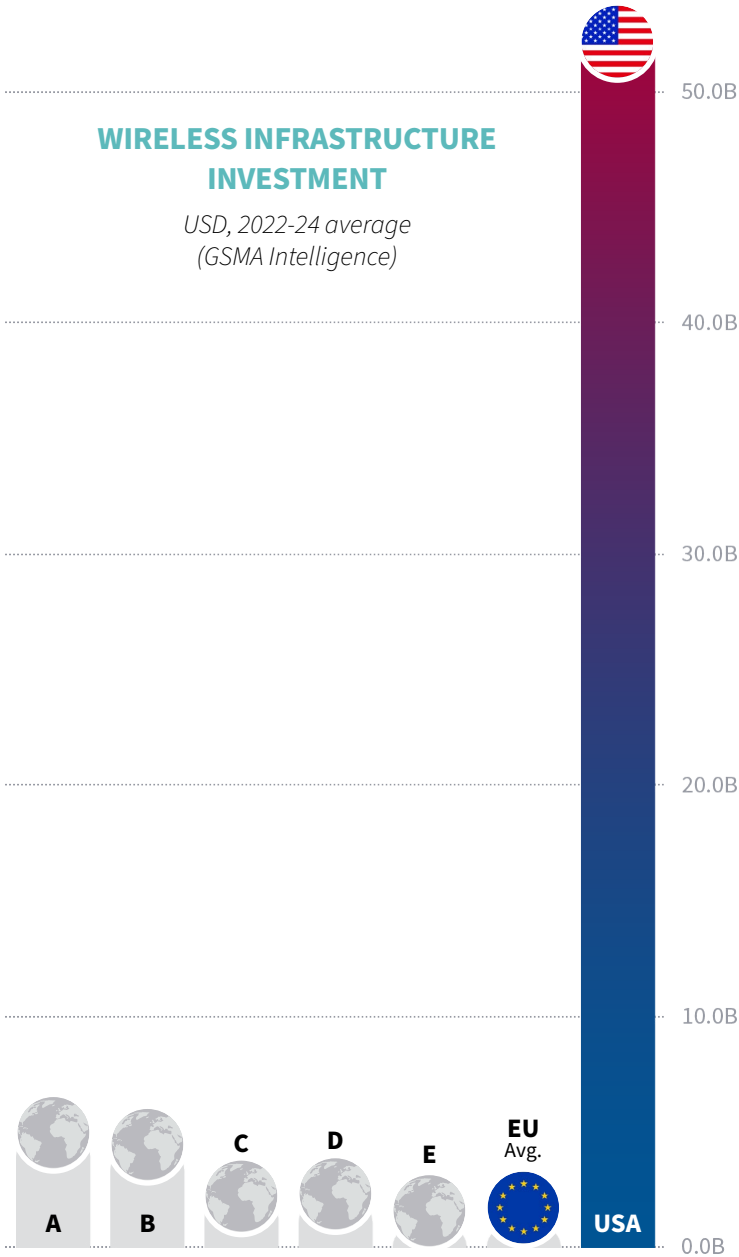
WIRELESS INFRASTRUCTURE INVESTMENT

USD per capita, (Omdia)

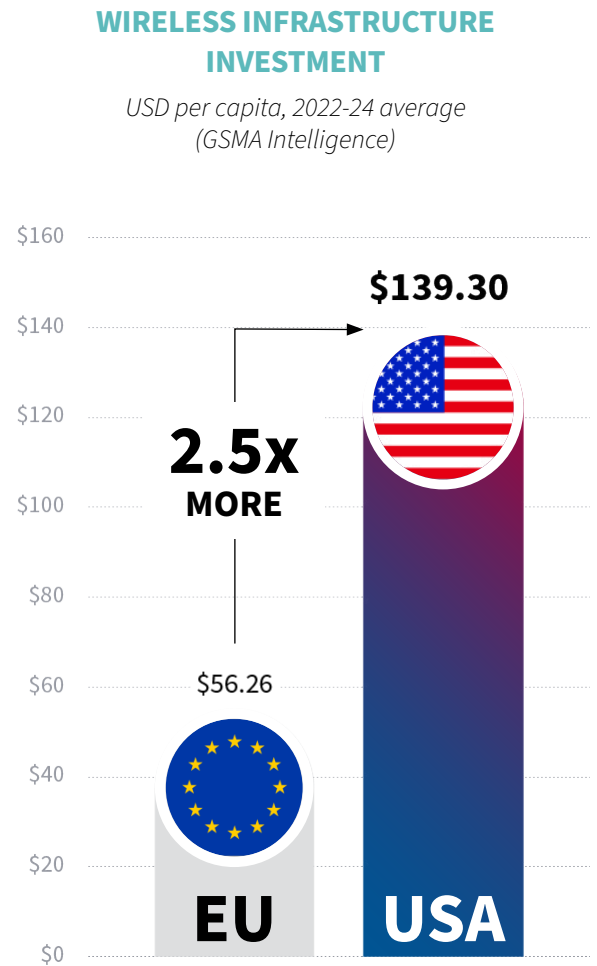


GSMA INTELLIGENCE RESEARCH

GSMA Intelligence also collects data on mobile operator investment. The GSMA methodology takes a bottom-up approach, examining reports from operators, regulators, and other sources. The data is focused specifically on investments made in operators' mobile infrastructure.¹⁵ A comparison to individual European countries in absolute terms makes for a stark contrast—the below compares North American wireless investment (of which the United States constitutes over 90 percent) to the top five investing countries in the European Union (EU).



Considering the GSMA Intelligence research figures for an EU-wide total on a per capita basis—a more apples-to-apples comparison—the data again show North American operators investing 2.5 times more than those in the EU.¹⁶



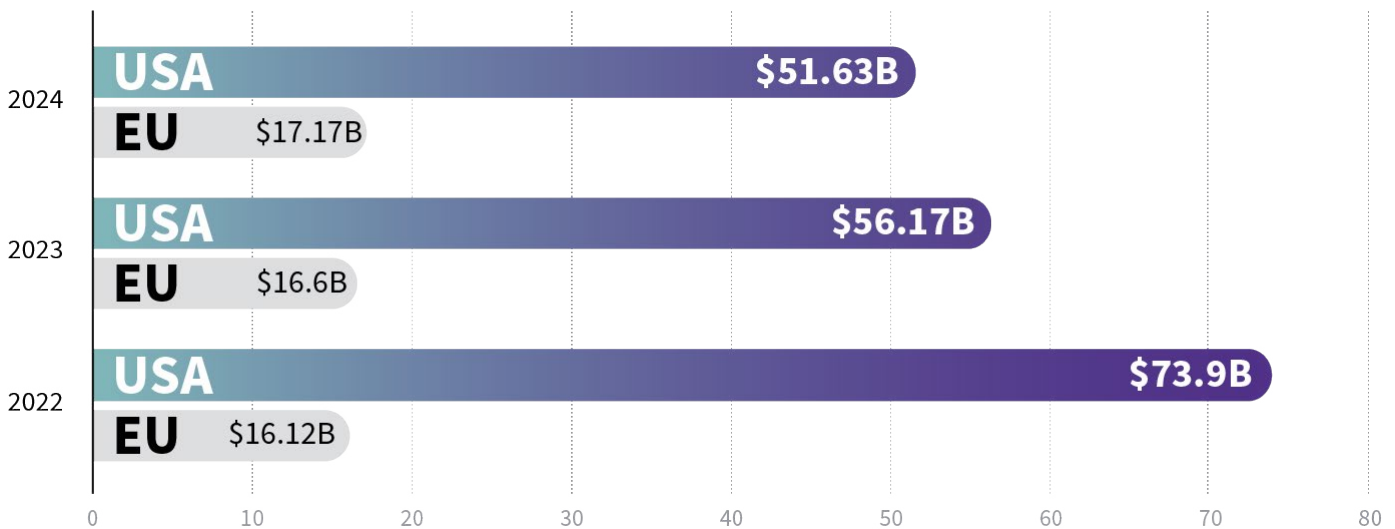
COMPANY-SPECIFIC REPORT COMPARISONS

CTIA also analyzed annual reports from six major mobile operators—the three largest European operators, and the three largest U.S. operators.¹⁷ This approach allows for a broader inclusion of various capital expenditures that support the overall broadband infrastructure in each continent. The U.S. operators studied were AT&T, T-Mobile, and Verizon; the three largest European operators, by total connections, are Deutsche Telekom, Telefonica, and Vodafone. These companies operate across most of Europe with subsidiaries across the world, with headquarters in Germany, Spain, and England respectively.

Almost all of these companies have extensive wireline assets—these figures include investments made to wireline broadband and telephony networks alongside mobile network infrastructure as traditionally understood. These figures also include spectrum acquisition costs and other investments across their businesses—a comprehensive view of anything the firms report as capital expenditures.

CAPEX OF THREE LARGEST EUROPEAN VS U.S. OPERATORS

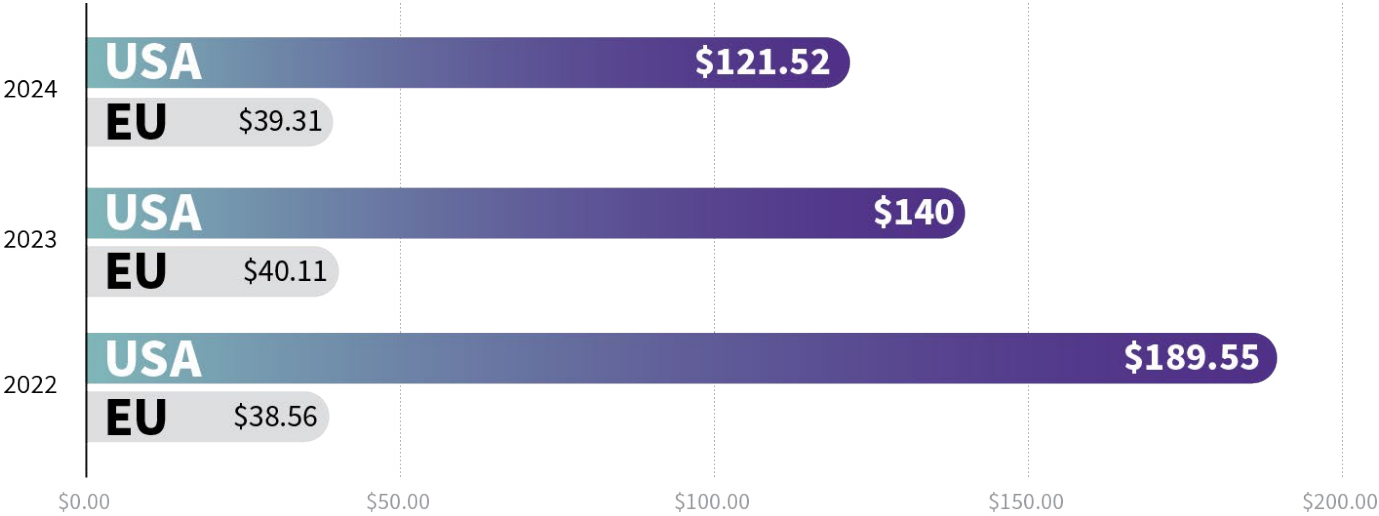
(USD, billions)



In absolute terms, the three largest U.S. operators invested on average 3.6 times more than the three largest European operators. This approach also allows comparison of investment on a per-connection basis, consistent with the subscriber figures reported in each company’s financial filings.¹⁸ For 2022-2024, the large U.S. operators invested on average 3.8 times more on a per-subscriber basis.

CAPEX PER SUBSCRIBER OF THREE LARGEST EUROPEAN VS U.S. OPERATORS

(USD)



Policy Recommendations and Conclusion

Considering the power of wireless networks to boost productivity and multiply economic growth throughout the economy, with 5G contributing as much as \$825 billion in GDP and 4.5 million jobs annually in the United States, policymakers should be keen to encourage providers to invest in building better connectivity.¹⁹ Wireless networks continually deliver greater value for consumers, allowing virtually everyone to be more productive.²⁰

There are several intersecting and compounding reasons U.S. operators invest so much more heavily than those in Europe, but a key factor is the uniform, nation-wide regulatory structure in the United States, with policies supporting vigorous competition between companies operating across the entire country. This has allowed operators to take advantage of economies of scale to more effectively surmount the challenges of network infrastructure deployment with tremendous up-front costs. Operators in the U.S. treat network investment as an opportunity to differentiate offerings and compete not just with other wireless networks but also within a broader technology ecosystem for influence over the direction of future, long-term innovation.

Europe, on the other hand, has long suffered a fragmented patchwork of national and local rules that has chilled investment and limited the scale at which companies can compete. Regulation and competition policy in the telecom sector has also “disincentivized consolidation,” as explained in the European Commission report, resulting in a “multiplicity of smaller players” in a fragmented and inefficient market.²¹ European operators have to navigate disparate regulations and spectrum access processes across the different markets they operate in.

This leads to four key policy implications.

- 1. First, and most importantly, policymakers should ensure there is sufficient full-power licensed spectrum available for commercial use.** Spectrum is the core input limiting the performance of wireless networks. Making additional spectrum available sees competing operators bid at auction for the opportunity to augment their capacity and win over customers with a better product, driving investment and downstream benefits.
- 2. Second, U.S. regulators can build on previous efforts to streamline wireless facility deployments.** The FCC is actively exploring opportunities to reform its environmental and historic preservation related permitting, as well as its purview over local siting procedures, to help streamline and accelerate wireless facility deployments. These and other efforts to modernize regulations can ensure network build-out isn't hobbled with red tape and unnecessary costs.
- 3. Third, tax policy can be an effective lever to encourage large-scale investment that can only be recouped over a long time horizon.** Here the One Big Beautiful Bill offers significant tax benefits, particularly its accelerated deduction and 100 percent bonus depreciation for qualified assets, that will encourage additional investment. One major broadband operator has already announced these tax changes will accelerate deployments that will help support its wireless network.²²
- 4. Lastly, ensure that the U.S. retains its world-leading wireless networks that will be critical to our AI future with a consistent federal framework that avoids the fragmentation that has plagued European networks.** Federal preemption of disjointed state and local rules can play an important role, especially when those policies thwart a national framework that favors competition and choice. This applies with equal force to AI, wireless and broadband policy.

“EU companies lack the scale required to provide citizens with ubiquitous access to 5G broadband.”

- European Commission Report

Investment does not happen automatically. An environment of vigorous competition, with sufficient access to large blocks of contiguous, nationwide spectrum, within a framework of uniform national regulations will help ensure the U.S. retains its world-leading wireless networks.

Endnotes

- 1 <https://www.nokia.com/newsroom/open-letter-of-eu-industrial-leaders-on-digitalisation-connectivity-and-competitiveness/>.
- 2 https://commission.europa.eu/document/97e481fd-2dc3-412d-be4c-f152a8232961_en. The report also noted that this cannot be explained away by differences in purchasing power. <https://federalists.eu/the-future-of-european-competitiveness/> at Part B, pg 69.
- 3 <https://www.ft.com/content/aa428f97-2856-4181-908d-3838dd56bd01>.
- 4 <https://www.mobileworldlive.com/operators/european-heavyweights-address-common-problems/>.
- 5 <https://www.ctia.org/news/the-importance-of-licensed-spectrum-and-wireless-telecommunications-to-the-american-economy>.
- 6 <https://www.ctia.org/news/report-5g-promises-massive-job-and-gdp-growth-in-the-u-s>.
- 7 President Trump continued, explaining of 5G, that “basically, it covers almost everything, when you get right down to it. Pretty amazing.” <https://trumpwhitehouse.archives.gov/briefings-statements/remarks-president-trump-united-states-5g-deployment/>
- 8 <https://www.ctia.org/news/2025-annual-survey-highlights>.
- 9 Ibid.
- 10 Ibid.
- 11 Studied providers included AT&T, Dish, Verizon, T-Mobile, and UScellular. <https://api.ctia.org/wp-content/uploads/2024/04/Wireless-Investment-and-Economic-Benefits.pdf>.
- 12 Ibid.
- 13 Ibid.
- 14 Including Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, and Sweden.
- 15 Meaning investment in the RAN and core networks, but excluding other capex or spectrum acquisition costs.
- 16 GSMA data tracks 50 sovereign European states and territories, notably excluding Russia, which is included in its Eurasia data. Here we present the total and average for the 27 EU countries. North American data consists of the United States, Canada, Greenland, and English-speaking Caribbean islands (but excludes Mexico, which GSMA includes in its Latin America cohort. Population data sourced from OECD Data Explorer – Population Statistics (resident population, mid-year estimates).
- 17 We compared annual reports from Deutsche Telekom, Telefonica, and Vodafone against AT&T, T-Mobile, and Verizon, the largest wireless companies from the respective regions on the basis of total connections, excluding Deutsche Telekom’s U.S. operations. We only excluded investment outside of the relevant markets. For example, we excluded operations and investment in Africa, the Middle East, and other markets in Asia and South America by European operators and in Mexico by U.S. operators.
- 18 Here we considered the total connections—fixed and mobile—to be consistent with the broader capex figures, but excluded pay TV connections.
- 19 <https://www.ctia.org/news/the-importance-of-licensed-spectrum-and-wireless-telecommunications-to-the-american-economy>.
- 20 <https://www.ctia.org/news/greater-value-at-lower-prices-thats-wireless-today>.
- 21 Draghi report, supra note 2.
- 22 <https://about.att.com/story/2025/accelerating-fiber-network-expansion-one-big-beautiful-bill-act.html>.

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